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 TITLE: Cyclosporin fermentation with Tolypocladium varium
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 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2640641	A1	19900622	FR 1989-16878	19891220
FR 2640641	B1	19910510		
HU 52164	A2	19900628	HU 1988-6497	19881220
HU 201577	B	19901128		
DK 8906409	A	19900621	DK 1989-6409	19891218
DK 174719	B1	20031006		
SE 8904262	A	19900621	SE 1989-4262	19891219
SE 505442	C2	19970825		
SU 1836425	A3	19930823	SU 1989-4742791	19891219
CA 2006144	AA	19900620	CA 1989-2006144	19891220
CA 2006144	C	19950221		
NO 8905160	A	19900621	NO 1989-5160	19891220
NO 175873	B	19940912		
NO 175873	C	19941221		
EP 379708	A1	19900801	EP 1989-123535	19891220
EP 379708	B1	19941207		
R: DE				
GB 2227489	A1	19900801	GB 1989-28715	19891220

GB 2227489	B2	19920916		
JP 02231071	A2	19900913	JP 1989-328529	19891220
JP 07063356	B4	19950712		
AT 8902891	A	19910115	AT 1989-2891	19891220
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DD 290356	A5	19910529	DD 1989-335977	19891220
US 5156960	A	19921020	US 1989-454005	19891220
PL 162959	B1	19940131	PL 1989-282876	19891220
FI 92603	B	19940831	FI 1989-6157	19891220
FI 92603	C	19941212		
CZ 283557	B6	19980513	CZ 1989-7225	19891220
SK 279768	B6	19990512	SK 1989-7225	19891220
LV 10500	B	19950820	LV 1993-708	19930628
			HU 1988-6497	A 19881220

PRIORITY APPLN. INFO.:

AB The immunosuppressants cyclosporins A, B, and C are manufd. by fermn. with the novel filamentous fungus *Tolypocladium varium* CY/93. A conidial inoculum propagated in a casein peptone/glucose/salts medium that was used to inoculate a trypton/glucose/urea/salts medium 5 L stirred at 1000 rpm and aerated at 300 L/h. After 96 h maltose 100 g (sterile solution) was added. After a further 144 h cyclosporin concentration in the medium was 950 µg/mL (bioassay). Recovery of cyclosporin A from 4.8 L was 2.75 g.

IT 59787-61-0P, Cyclosporin C 63775-95-1P, Cyclosporin B
 RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP
(Preparation)

(manufacture of, with *Tolypocladium varium* CY/93)

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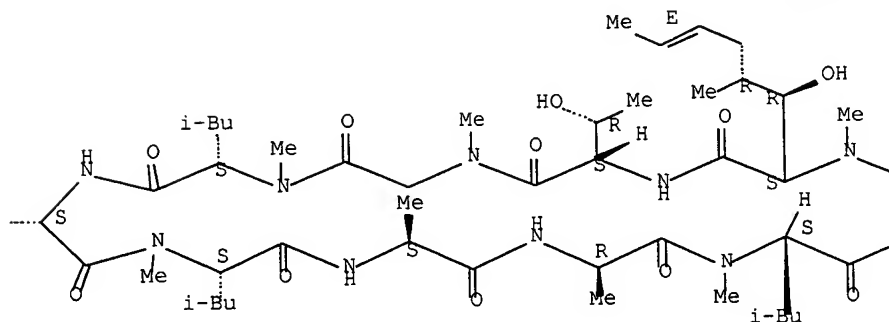
CN Cyclosporin C (9CI) (CA INDEX NAME)

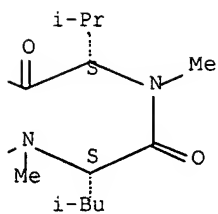
Absolute stereochemistry.
 Double bond geometry as shown.

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i-Pr

PAGE 1-B





RN 63775-95-1 HCAPLUS
CN Cyclosporin B (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

i-Pr

